

IN THE CLAIMS

Please cancel Claims 1-10 without prejudice or disclaimer of subject matter.

Please amend Claim 11 to read as follows.

1-10. (Canceled)

11. (Currently Amended) A method of manufacturing a liquid discharge head, the liquid discharge head comprising a device substrate, a liquid flow path having a bubble generating region for generating a bubble in liquid therein, a discharge energy generating device provided on the device substrate and arranged in the liquid flow path to generate thermal energy for generating the bubble in the liquid, a discharge port to discharge the liquid in the liquid flow path, the discharge port communicating with the liquid flow path, and a movable member mounted on the device substrate to face the discharge energy generating device with an interval with respect to the discharge energy generating device, the movable member being plate-like and having a fixed end part in an upstream side of the movable member in the direction of liquid flow in the liquid flow path and a free end at a downstream end of the movable member, said method comprising the steps of:

forming a shape of the movable member on the device substrate by a photolithographic technique dry etching method; and

removing a right-angled part and an acute-angled part of an edge of the movable member.

12. (Previously Presented) The method of manufacturing a liquid discharge head according to claim 11, wherein in said removing step, a curved surface is formed on the edge of the movable member.

13. (Previously Presented) The method of manufacturing a liquid discharge head according to claim 11, wherein in said removing step, the edge of the movable member is made chamfered.

14. (Previously Presented) The method of manufacturing a liquid discharge head according to claim 11, wherein said removing step comprises soaking the movable member in an etching solution.

15. (Previously Presented) The method of manufacturing a liquid discharge head according to claim 11, wherein said removing step comprises radiating laser light on the edge of the movable member.

16. (Withdrawn) A method of manufacturing a liquid discharge head, comprising:

a device substrate, a plurality of discharge energy generating devices to generate thermal energy to let the liquids generate the bubble, being provided in parallel on a surface thereof;

a plurality of liquid flow paths, in each of which each of said discharge energy generating devices is arranged, having the bubble generating region to let the liquid generate the bubble;

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a plurality of discharge ports to discharge the liquid in the liquid flow path, each of the discharge ports communicating with each of said liquid flow paths;

a flow path wall member mounted on said device substrate to form a plurality of said liquid flow path; and

a plurality of plate-like movable members, which are mounted on said device substrate to face each of said plurality of discharge energy generating devices with an interval with respect to each of said discharge energy generating devices and an end part of an upstream side in the direction of the liquid flow in said liquid flow path is fixed and the downstream end is the free end;

a ceiling board, that is adhered to a face of a side opposite to said device substrate side, of a plurality of said side wall of the flow path,

in which on the surface of said device substrate, a plurality of electrode layers, which are extended to at least the part of the region and the part around the region corresponding to said plurality of movable members and each of which is electrically connected to said discharge energy generating device, are formed, comprising the steps of:

preparing said device substrate in which said plurality of discharge energy generating devices are mounted on the surface of said device substrate and a plurality of electrode layers;

forming a pattern member, corresponding to a space of said bubble generating region, on the surface of said device substrate;

layering a first material layer for forming said movable member to cover said pattern member;

 layering an etching-resistant protection film, having etching-resistant property against said first material layer, on the surface of said first material layer;

patterning said etching-resistant protection film to make said movable member of which angle is right-angled to the direction of the liquid flow in said liquid flow path and width is small in a shape in parallel to the surface of said device substrate in said movable member;

layering a second material layer for forming said side wall of the flow path to cover said etching-resistant protection film patterned;

removing the part, corresponding to said liquid flow path, of said second material layer by etching and forming said side wall of the flow path and said liquid flow path; and

removing said pattern member after the step for forming said liquid flow path and forming said movable member.

17. (Withdrawn) The method of manufacturing a liquid discharge head according to claim 11, wherein silicon nitride is used as the material of said movable member.

18. (Withdrawn) The method of manufacturing a liquid discharge head according to claim 16, wherein silicon nitride is used as the material of said movable member,

PSG is used as the material of said pattern member, and aluminum is used as the material of said etching-resistant protection film.

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Concluded